

Listing of the Claims:

***This listing of claims will replace all prior versions, and listings of claims in the application:***

1. (Currently amended) A vehicle system comprising:

(A) a control system for an equipment service vehicle comprising:

- (1) a power source;<sub>i</sub>
- (2) a power transmission link;<sub>i</sub>
- (3) a plurality of input devices;<sub>i</sub>
- (4) a plurality of output devices;<sub>i</sub>
- (5) a plurality of microprocessor-based interface modules and a communication network, the plurality of interface modules being coupled to the power source by way of the power transmission link, the plurality of interface modules being interconnected to each other by way of the communication network, each of the plurality of interface modules being coupled to respective ones of the plurality of input devices and the plurality of output devices, and the plurality of interface modules storing I/O status information for the plurality of input devices and the plurality of output devices; and

(B) a personal digital assistant;<sub>i</sub>

wherein the control system is configured to wirelessly communicate at least some of the I/O status information to the personal digital assistant;<sub>i</sub>

wherein the control system is configured to wirelessly receive commands from the personal digital assistant and adjust output states of individual ones of the plurality of output devices in response to the commands, thereby allowing the personal digital assistant to manipulate the output states of the plurality of output devices;

wherein the personal digital assistant is configured to initiate at least a vehicle test program on at least one of the plurality of output devices; and

wherein the personal digital assistant is configured to be positioned in proximity to at least one of the plurality of output devices and is configured to wirelessly communicate commands to adjust the at least one output device while in proximity to the at least one output device.

2. (Currently Amended) The vehicle system of claim 1, wherein the ~~control system is configured to receive commands from the personal digital assistant and adjust output states of individual ones of the plurality of output devices in response to the commands, thereby allowing the personal digital assistant to manipulate the output states of the plurality of output devices.~~ personal digital assistant is configured to suspend or terminate the vehicle test program to at least one of the output devices.

3. (Original) The vehicle system according to claim 1, wherein the output states of multiple output devices are manipulated automatically and the personal digital assistant is configured to generate a report comprising information about whether the output states of the multiple output devices are within acceptable operating parameters.

4. (Original) The vehicle system according to claim 1, wherein the personal digital assistant is configured to generate a report based on the I/O status information.

5. (Original) The vehicle system according to claim 4, wherein the report comprises information pertaining to the utilization of the vehicle during a particular period of time.

6. (Original) The vehicle system according to claim 4, wherein the report comprises information pertaining to the loading of the vehicle during a particular period of time.

7. (Original) The vehicle system according to claim 1, wherein the I/O status information is communicated by way of an encrypted wireless communication link.

8. (Original) The vehicle system according to claim 1, wherein the I/O status information is wirelessly communicated directly from the control system to the personal digital assistant.

9. (Original) The vehicle system according to claim 1, wherein the personal digital assistant is configured to receive input using a touch-screen.

10. (Original) The vehicle system according to claim 1, wherein the personal digital assistant is configured to display the I/O status information on a display.

11. (Original) The vehicle system according to claim 1,  
wherein each of the plurality of interface modules broadcasts I/O status information pertaining to the respective input and output devices coupled to each respective interface module to the remaining interface modules; and  
wherein each of the plurality of interface modules maintains an I/O status table, the I/O status table storing I/O status information for the plurality of input devices and the plurality of output devices.

12. (Original) The vehicle system according to claim 1, wherein output states of the plurality of output devices are determined at the respective interface module to which the output device is coupled based, at least in part, on input status information stored at the respective interface module.

13. (Original) The vehicle system according to claim 1, wherein the plurality of interface modules are distributed throughout the vehicle, and each respective interface module is locally disposed with respect to the respective input and output devices to which the respective interface module is coupled, so as to permit distributed data collection from the respective input devices to the respective interface module and distributed power distribution from the respective interface module to the respective output devices.

14. (Currently amended) A system comprising:
- (A) a fleet of equipment service vehicles, each vehicle in the fleet of vehicles comprising a control system that comprises:
    - (1) a power source;<sub>i</sub>
    - (2) a power transmission link;<sub>i</sub>

- (3) a plurality of input devices;
- (4) a plurality of output devices;
- (5) a plurality of microprocessor-based interface modules and a communication network, the plurality of interface modules being coupled to the power source by way of the power transmission link, the plurality of interface modules being interconnected to each other by way of the communication network, each of the plurality of interface modules being coupled to respective ones of the plurality of input devices and the plurality of output devices, and the plurality of interface modules storing I/O status information for the plurality of input devices and the plurality of output devices; and

(B) a personal digital assistant;

wherein the personal digital assistant is capable of being connected to receive I/O status information from each vehicle in the fleet of vehicles by way of a wireless communication network, the personal digital assistant being capable of generating a report that compares utilization information for each of the vehicles; and:

wherein the report is based on distance traveled by at least one vehicle in the fleet of equipment service vehicles.

15. (Currently amended) ~~The system according to claim 14,~~ A system comprising:

(A) a fleet of equipment service vehicles, each vehicle in the fleet of vehicles comprising a control system that comprises:

- (1) a power source;
- (2) a power transmission link;
- (3) a plurality of input devices;
- (4) a plurality of output devices;
- (5) a plurality of microprocessor-based interface modules and a communication network, the plurality of interface modules being

coupled to the power source by way of the power transmission link, the plurality of interface modules being interconnected to each other by way of the communication network, each of the plurality of interface modules being coupled to respective ones of the plurality of input devices and the plurality of output devices, and the plurality of interface modules storing I/O status information for the plurality of input devices and the plurality of output devices; and

(B) a personal digital assistant;

wherein the personal digital assistant is capable of being connected to receive I/O status information from each vehicle in the fleet of vehicles by way of a wireless communication network, the personal digital assistant being capable of generating a report that compares utilization information for each of the vehicles; and

wherein the personal digital assistant generates the report based on distance traveled by each of the vehicles in the fleet of equipment service vehicles.

16. (Cancelled)

17. (Currently amended) ~~The system according to claim 14,~~ A system comprising:

(A) a fleet of equipment service vehicles, each vehicle in the fleet of vehicles comprising a control system that comprises:

(1) a power source;

(2) a power transmission link;

(3) a plurality of input devices;

(4) a plurality of output devices;

(5) a plurality of microprocessor-based interface modules and a communication network, the plurality of interface modules being coupled to the power source by way of the power transmission link, the plurality of interface modules being interconnected to each other by way of the communication network, each of the

plurality of interface modules being coupled to respective ones of the plurality of input devices and the plurality of output devices, and the plurality of interface modules storing I/O status information for the plurality of input devices and the plurality of output devices; and

(B) a personal digital assistant;

wherein the personal digital assistant is capable of being connected to receive I/O status information from each vehicle in the fleet of vehicles by way of a wireless communication network, the personal digital assistant being capable of generating a report that compares utilization information for each of the vehicles;

wherein the personal digital assistant generates the report based on engine utilization time of the vehicles in the fleet of equipment service vehicles.

18. (Currently amended) ~~The system according to claim 14,~~ A system comprising:

(A) a fleet of equipment service vehicles, each vehicle in the fleet of vehicles comprising a control system that comprises:

(1) a power source;

(2) a power transmission link;

(3) a plurality of input devices;

(4) a plurality of output devices;

(5) a plurality of microprocessor-based interface modules and a communication network, the plurality of interface modules being coupled to the power source by way of the power transmission link, the plurality of interface modules being interconnected to each other by way of the communication network, each of the plurality of interface modules being coupled to respective ones of the plurality of input devices and the plurality of output devices, and the plurality of interface modules storing I/O status

information for the plurality of input devices and the plurality of output devices; and

(B) a personal digital assistant;

wherein the personal digital assistant is capable of being connected to receive I/O status information from each vehicle in the fleet of vehicles by way of a wireless communication network, the personal digital assistant being capable of generating a report that compares utilization information for each of the vehicles; and

wherein the personal digital assistant generates the report based on on-site time of the vehicles in the fleet of equipment service vehicles.

19. (Original) The system according to claim 14, wherein the vehicle comprises a plurality of vehicle subsystems, and groups of output devices are compared to indicate relative usage of particular vehicle subsystems.

20. (Original) The system according to claim 14, wherein each of the plurality of interface modules broadcasts I/O status information pertaining to the respective input and output devices coupled to each respective interface module to the remaining interface modules; and

wherein each of the plurality of interface modules maintains an I/O status table, the I/O status table storing I/O status information for the plurality of input devices and the plurality of output devices.

21. (Original) The system according to claim 14, wherein output states of the plurality of output devices are determined at the respective interface module to which the output device is coupled based, at least in part, on input status information stored at the respective interface module.

22. (Original) The system according to claim 14, wherein the plurality of interface modules are distributed throughout the vehicle, and each respective interface module is locally disposed with respect to the respective input and output devices to which the respective interface module is coupled, so as to permit distributed data collection from the respective input devices to

the respective interface module and distributed power distribution from the respective interface module to the respective output devices.

23. (Currently amended) A method for wirelessly manipulating an equipment service vehicle comprising:

transmitting I/O status information from a control system to a portable handheld off-board computer, the I/O status information being transmitted wirelessly to the portable handheld off-board computer, the control system comprising a plurality of microprocessor-based interface modules and a communication network, the plurality of interface modules being coupled to a power source by way of a power transmission link, the plurality of interface modules being interconnected to each other by way of the communication network, each of the plurality of interface modules being coupled to respective ones of a plurality of input devices and a plurality of output devices, and the plurality of interface modules storing the I/O status information for the plurality of input devices and the plurality of output devices;

receiving a vehicle test program command from a programmed portable handheld off-board computer positioned in proximity to a first test location, the vehicle test program command being received wirelessly, wherein the programmed portable handheld off-board computer is configured to perform a vehicle test program to test at least one of the plurality of output devices located at the first test location;

adjusting the at least one output device located at the first test location responsive to receiving the test program command;

repeating the receiving and adjusting steps with the portable handheld off-board computer being positioned at a plurality of additional test locations.

~~A system and method for wirelessly manipulating an equipment service vehicle comprising:~~

~~the equipment service vehicle comprising a control system which includes:~~

- ~~(1) — a power source,~~
- ~~(2) — a power transmission link,~~
- ~~(3) — a plurality of input devices,~~
- ~~(4) — a plurality of output devices,~~

(5) ~~a plurality of microprocessor-based interface modules and a communication network, the plurality of interface modules being coupled to the power source by way of the power transmission link, the plurality of interface modules being interconnected to each other by way of the communication network, each of the plurality of interface modules being coupled to respective ones of the plurality of input devices and the plurality of output devices, and the plurality of interface modules storing I/O status information for the plurality of input devices and the plurality of output devices; and~~

~~the method comprising:~~

~~communicating at least some of the I/O status information from the control system to a personal digital assistant, the I/O status information being communicated wirelessly to the personal digital assistant;~~

~~communicating a command from the personal digital assistant to the control system.~~

24. (Cancelled)

25. (Currently amended) The ~~system and method of claim 23, further comprising~~ wherein the communicating a vehicle test program command step further comprises at least one of the programmed portable handheld off-board computer personal digital assistant and the control system automatically manipulating output states of multiple output devices in response to at least one vehicle test program command.

26. (Currently amended) The ~~system and method of claim 23, further comprising~~ generating a report comprising information pertaining to the utilization of the vehicle during a particular period of time.

27. (Cancelled)

28. (Currently amended) A vehicle system comprising:

- (A) an equipment service vehicle including a control system which comprises:
- (1) a power source,
  - (2) a power transmission link,
  - (3) a plurality of input devices,
  - (4) a plurality of output devices,
  - (5) a plurality of microprocessor-based interface modules and a communication network, the plurality of interface modules being coupled to the power source by way of the power transmission link, the plurality of interface modules being interconnected to each other by way of the communication network, each of the plurality of interface modules being coupled to respective ones of the plurality of input devices and the plurality of output devices, and the plurality of interface modules storing I/O status information for the plurality of input devices and the plurality of output devices; and
- (B) a portable handheld off-board computer including a display and an operator input device;
- wherein the portable handheld off-board computer is configured to be locally disposed relative to the equipment service vehicle, and to communicate wirelessly with the control system, and to communicate a command from the portable handheld off-board computer to the control system which adjusts output states of individual ones of the plurality of output devices in response to the commands, thereby allowing the portable handheld off-board computer to manipulate the output states of the plurality of output devices;
- wherein the portable handheld off-board computer is configured to initiate at least a vehicle test program on at least one of the plurality of output devices; and
- wherein the portable handheld off-board computer is configured to be positioned in proximity to at least one of the plurality of output devices and is configured to wirelessly communicate commands to adjust the at least one output device while in proximity to the at least one output device.

29. (Currently Amended) The vehicle system of claim 28, wherein the portable handheld off-board computer is a personal digital assistant.

30. (Currently Amended) The vehicle system of claim 28, wherein the portable handheld off-board computer is configured to communicate directly with the control system up to a range of approximately one mile.

31. (Currently Amended) The vehicle system of claim 30, wherein the portable handheld off-board computer is configured to communicate directly with the control system up to a range of approximately 1000 feet.

32. (New) The vehicle system according to claim 1, wherein the personal digital assistant is configured to generate a customer invoice based on the I/O status information.

33. (New) The vehicle system of claim 1, wherein the control system is configured to require communication with the personal digital assistant to enable vehicle movement.

34. (New) The system of claim 14, wherein the personal digital assistant is configured to generate a customer invoice based on the I/O status information.

35. (New) The vehicle system of claim 28, wherein the control system is configured to require communication with the portable handheld off-board computer to enable vehicle movement.

36. (New) The vehicle system of claim 28, wherein the personal digital device is configured to suspend or terminate the test program to at least one of the output devices.

37. (New) A vehicle system comprising:

(A) a control system for an equipment service vehicle comprising:

- (1) a power source;
- (2) a power transmission link;
- (3) a plurality of input devices;

(4) a plurality of output devices;  
(5) a plurality of microprocessor-based interface modules and a communication network, the plurality of interface modules being coupled to the power source by way of the power transmission link, the plurality of interface modules being interconnected to each other by way of the communication network, each of the plurality of interface modules being coupled to respective ones of the plurality of input devices and the plurality of output devices, and the plurality of interface modules storing I/O status information for the plurality of input devices and the plurality of output devices; and a portable handheld off-board computer including a display and an operator input device;

(6) a storage compartment configured to store cargo; and  
(B) a portable handheld off-board computer including a display and an operator input device;

wherein the portable handheld off-board computer is configured to wirelessly receive a radio frequency signal from the cargo stored in the storage compartment; and

wherein the portable handheld off-board computer is configured to wirelessly receive at least some of the I/O status information from the control system.

38. (New) The vehicle system of claim 37, wherein the radio frequency signal is configured to identify a characteristic of the cargo.

39. (New) The vehicle system of claim 37, wherein portable handheld off-board computer is configured to generate a report based on the characteristic of the cargo.

40. (New) The vehicle system of claim 37, wherein the portable handheld off-board computer is a personal digital assistant.